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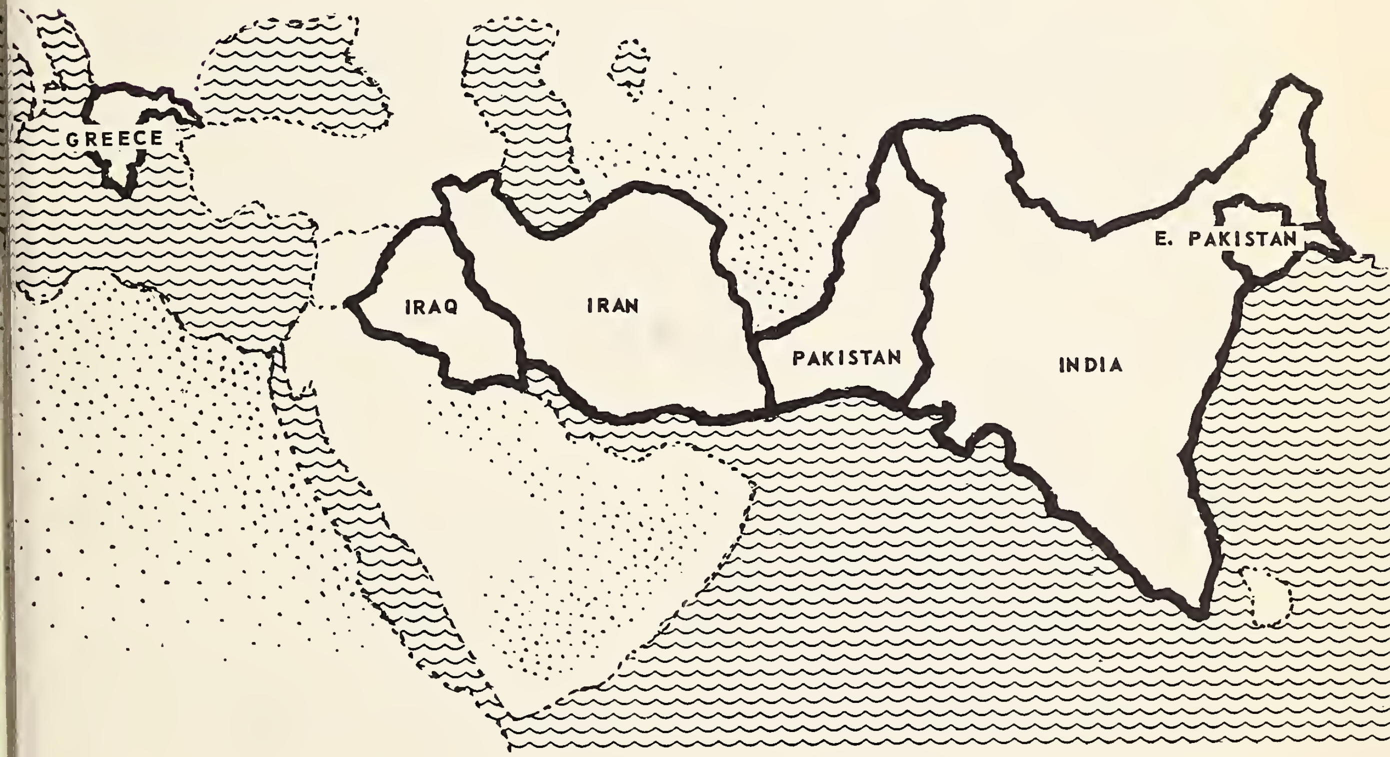
COTTON

in Five Eurasian Countries



by W. E. Christian, ~~Jr.~~

and Frank D. Barlow, Jr.

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PREFACE

This report is based upon a first-hand investigation made by W. E. Christian, Jr., in the summer of 1956 on cotton industry developments in selected countries of Southeast Asia and the Middle East, and in Greece. Purpose of the survey was to evaluate both the present situation and the problems and possibilities of cotton production in each country, as well as the long-range prospects for cotton production and consumption. The individual summary statements included in this report are for India, Pakistan, Iran, Iraq, and Greece. The Foreign Agricultural Service has recently published special reports on cotton in Turkey, Syria, and Egypt; these countries have therefore been excluded from this report.

In the preparation of the statement for each individual country, major emphasis has been placed on production problems, domestic requirements, and probable export availabilities, with an overall review of trends and prospects. The statements contain only minimum reviews of the economic situations in the individual countries. However, in making the appraisals and evaluations, careful consideration was given to the agricultural and industrial resources available in each country, the country's position in international trade, its balance-of-payments problems, and the basic environmental, physical, and economic factors affecting maximum resource utilization.

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COTTON IN FIVE EURASIAN COUNTRIES

By W. E. Christian, Jr., and Frank D. Barlow, Jr.

SUMMARY

It is apparent that cotton has very strong competitive staying power in the Middle East and Southeast Asia. Although the economic reasons for this strong position may vary from country to country, a basic underlying factor is that cotton can be produced and marketed on a volume basis with little risk of quality deterioration as it moves through international marketing channels. Every country has some food and specialty crops that may give higher economic returns to a limited quantity of the resources employed in their production. However, limited local demand, seasonality of production, and especially the lack of rapid transportation and modern refrigeration equipment set an upper limit on the volume that can be marketed efficiently at prices returning more to producers than cotton prices do. For this reason, in the competition for existing productive resources as well as for new resources that might be brought into agricultural production, the broad impact takes place between cotton and the small grains--either food or feed.

Throughout this general area of the world, cotton at 1956 cost-price relationships has been on the average from one and one-half to three times as profitable as the small grains in the irrigated areas. In the rain-fed areas, cotton's relative profitableness vis-a-vis the small grains narrows to the point where the quantity of rainfall is so small and its distribution so unpredictable that cotton production is not practical because of physical limitations. The small grains, however, can be grown during the winter and spring, when rainfall is highest. Thus they represent the most economic use of the land and labor resources within an individual country, even though the absolute return is very small.

This survey of cotton production pointed up the importance of price to the production response of producers. Even with the decline of 20 to 25 percent in world cotton prices from the 1955-56 season to the 1956-57 one, countries such as Pakistan and India and Syria continued to tax raw cotton exports. Despite these export taxes, cotton maintained its competitive advantage over alternative crops in those areas where it has been a traditional crop. No country made a marked cutback in acreage during the 1956-57 season in anticipation of lower cotton prices. To generalize, it is apparent that the downward adjustment in world cotton prices from 1955-56 season prices did not cause a significant shift of resources from cotton to other crops. Even further downward adjustments from the 1956-57 season prices would have only a minor influence, unless they involved a considerable downward trend in cotton prices relative to the prices of other crops--at least 25 to 30 percent from 1956-57 price relationships.

On the other hand, an upward trend in world cotton prices relative to those of competing crops would very likely stimulate the commitment of both public and private capital to the expansion of the resource base for cotton production, and particularly to the swifter intensification of existing cotton production through modern technology such as improved seed, increased and scientific application of fertilizers, more adequate insect control, and greater use of mechanical cultural methods. In short, higher relative prices for cotton would stimulate the development of new lands and provide greater profit incentive as well as greater profit margins that would help finance the application of improved and recommended production practices. Higher world cotton prices would speed up the development of know-how because its application is relatively more remunerative as prices rise. Higher world cotton prices would also encourage those already possessing the managerial know-how to devote their abilities to cotton.

INDIA

India, with its 380 million people, has had its complete independence for only a decade. The country is primarily agricultural, although it is making concentrated efforts to develop industries. The dense population, the limited agricultural resources, and the lack of a highly developed marketing system make it very difficult for the country to meet minimum food requirements. Government planners give this consideration top priority in the development of the Indian economy.

Since the partitioning of the Indian Union in 1947, the acreage and production of cotton in India has practically doubled. Acreage has increased from the post-partitioning low of some 10.9 million acres to 19.8 million in the 1956-57 season. The acreage increase has been gradual and steady since 1950. Production has risen from 2.7 million bales in 1950 to slightly more than 4 million annually since 1954. Average yield per acre over the past decade has ranged from 90 to 111 pounds, one of the lowest national average per acre yields in the world. During this period there has been no perceptible trend in yield per acre; therefore, production increases as a norm, not accounting for year-to-year fluctuation of acreage, have been more or less a function of increased acreage in cotton. In appraising the expansion of Indian cotton production it is important to note that the combined production of India and Pakistan at present is only slightly above what it was before World War II--an estimated 5.5 million in 1956-57 as compared to a 5.2 million average for 1934-38. Therefore, most of the increases achieved by India over the past decade have represented recovery to prewar levels rather than an expansion to a new high level.

Cotton: Acreage, yield, production, consumption, exports, and imports in India, averages 1934-38 and 1945-49, annual 1950-56

Year beginning August 1	Acreage	Yield per acre	Production	Consumption	Exports	Imports
	1,000 acres	*Pounds*	*1,000 bales*[1]	*1,000 bales*[1]	*1,000 bales*[1]	*1,000 bales*[1]
Average:						
1934-38[2]........	24,682	100	5,168	3,096	2,746	415
1945-49[3]........	12,515	96	2,769	3,668	568	648
Annual:						
1950............	14,556	90	2,720	3,150	146	807
1951............	16,198	92	3,110	3,507	123	1,026
1952............	15,693	92	3,005	3,881	292	563
1953............	17,182	105	3,750	3,970	103	565
1954............	18,684	111	4,322	4,110	207	500
1955............	19,978	92	3,840	4,265	552	524
1956............	19,843	98	[4] 4,060	[4] 4,490	[4] 250	[4] 600

[1] 1934-45, bales of 478 pounds; 1946 to date, bales of 480 pounds net.
[2] Includes Pakistan.
[3] Includes Pakistan through 1946.
[4] Preliminary estimates.

Consumption of raw cotton in India, which is exceeded only by that in the United States and the Soviet Union, has increased by over a million bales, from 3.2 million bales in 1950-51 to 4.5 million bales in 1956-57.

India exports sizable quantities of very short staple desi cotton, ranging between 100,000 and 500,000 bales annually. To meet the quality requirements of the domestic textile industry, India imports considerable quantities of medium to long staple cottons, mostly from the United States, East Africa, and Egypt. For the last decade, imports of cotton into India have exceeded exports of domestic cotton. It is very important for the Indian textile industry to obtain the higher quality longer staple cottons for the processing of fine goods; and unless these imports were permitted, India could not for long maintain its position as the second largest exporter of cotton textiles in the world.

In the 1947 partition, most of the textile manufacturing capacity was left in India, but a large part of the best cotton-producing area was included in Pakistan. At that time, the Indian Government intensified pressure to increase cotton production and this pressure has continued until the present time, even though the encouragement of cotton production is only a part of a broader economic development program.

Since the partition, India has been engaged in an elaborate economic development program under rather intensive governmental planning. Because of the pressure of population on the food supply, the government has had to gear its plans to both the short-run and the long-run needs of the country, and to make sure that the implementation of these plans does not conflict with the eventual attainment of the country's maximum production potential. Government planners have had to be extremely cautious in their attempts to raise productivity without creating undue inflationary pressures and contributing to further unemployment or underemployment. To do this, they have imposed rigid economic controls on the domestic economy and particularly foreign trade. Therefore, the factors having the greatest influence on the raw cotton supply have stemmed from government programs.

Not only is cotton important in the agricultural areas, as India's most important cash crop, but it is the basic raw material for India's largest nonagricultural industry--the cotton textile industry.

A production goal of 3.4 million bales (of 500 pounds) was set in the First Five-Year Plan initiated in 1950. This goal was exceeded by 1953. For the Second Five-Year Plan, which began in 1955, the goal was first set at 4.5 million bales, then raised to 4.8 million, and finally raised to 5.3 million at the request of the cotton industry. The burning question is whether the country can produce this quantity of cotton without jeopardizing food production.

India is one of the few cotton-producing countries that have made a concerted effort through systematic analysis to determine the relative profitableness of cotton and competing crops. Planners have relied on farm management analyses extensively as a basis for maximizing the use of both private andgovernment-controlled agricultural resources. Production decisions, of course, are not based on economic considerations alone; political and sociological factors also carry weight. Nevertheless, Indian leaders appear to have a sincere desire to make the best possible use of the available agricultural resources consistent with these other factors.

India's agricultural resources vary so greatly in quantity and quality from one area to another that references to average relationships are frequently misleading. This makes it difficult to evaluate the competitive position of cotton in the agricultural pattern. Even though much progress has been made in the analysis of farm management problems, it is still impossible to predict with accuracy the effects of a substantial drop in relative prices of cotton. Informed observers on the scene estimate that cotton acreage in the rain-fed sections would respond to relative price change much more rapidly than in the Middle East countries and in Pakistan; however, the exact magnitude of this response is very difficult to predict with existing statistical data. Profits from cotton grown under irrigated conditions appear to be such that the marginal response to price changes would be much less than for rain-grown cotton.

Even though there may be some increase in acreage due to the substitution of cotton for other crops when cotton prices rise relative to those of competing crops, the main potential for increasing cotton production in India is through increasing the total productivity and capacity of all agricultural resources, including know-how.

Probably some of the world's best organized agricultural research outside the United States is going on in India. The cotton research program is administered largely by the Indian Central Cotton Committee. In India, as in many other cotton-producing countries, breeding work is strongly emphasized--probably to the disadvantage of certain other types of research, although some research on fertilization, irrigation, and cultural practices is under way. The quantity and quality of the research work now under way gives a good prospect that in time this research will begin to pay off in increased yields per acre.

The country has undertaken a broad educational program and has set up an extension service. Because of the vast area to be covered and the present low educational level of the agricultural population, the educational problem in India is an extremely complex one. In addition, research results are reported in highly technical language. Farmers and even the agricultural extension workers have great difficulty in interpreting them. Most of the extension programs are primarily concerned with adult education in production techniques, such as distribution of fertilizers and planting seed, encouraging improved methods of cultivation and insect control, and teaching better irrigation practices. The literature available on extension work indicates that little emphasis is being placed on improved marketing practices, especially at the farm level.

Before partition, the Indian Union's major cotton area was the Punjab. Practically all of the irrigation development in the Punjab at the time of the partition was in the portion that went to Pakistan. The Eastern Punjab, which was included in India, had suitable soils for agricultural development but no irrigation facilities. After partitioning, India began a large-scale irrigation development in East Punjab that is expected to add between 5 million and 6 million acres to the country's irrigated area.

Whether the objectives of the Second Five-Year Plan can be accomplished, only time will tell, but the degree to which the objectives are achieved will have a major effect on the future developments in the cotton industry.

It appears reasonable to expect that within the next 5 years at least a million or more additional acres of cotton will come under irrigation. About 9 million acres are to be irrigated by projects already under construction, and a large part of this area is located in the Punjab, which is reportedly excellent cotton land. Thus, irrigation will certainly play a major role in raising the country's cotton production potential. Observers expect that within 3 years a considerable increase in the irrigated area will have taken place in the Punjab; and, since this is a new development, more advanced production techniques will probably be used. Yields per acre in these areas of the Punjab are expected to run between 300 and 500 pounds of lint--considerably higher than the national average. If plans materialize in the Punjab development, the country's cotton production norm by 1960 may very likely approach 5 million bales annually, which is fairly close to the final goals outlined in the Second Five-Year Plan.

Gradual improvement that is expected in cultural practices, insect control, fertilization practices, and planting seed will also help cut down fluctuations in production from year to year as well as increase the level of production.

Prices of cotton in the world market will have some indirect effect on the rate of production expansion but not so much as many people might believe. Most of the expansion contemplated over the next 5 years is expected to come through increasing the total quantity and quality of agricultural resources and not through shifting present resources from the production of other crops to cotton. At 1957 cost-price relationships, cotton appears to have a reasonable margin over competitive crops, and an adverse price shift of as much as 15 to 20 percent would probably cause only minor shifts away from cotton.

The foreign exchange requirements in the Second Five-Year Plan are such that India must maintain cotton production high enough to supply most of its cotton textile mill requirements of raw cotton without depending on increased allocation of foreign exchange for raw cotton imports. Cotton textile exports are expected to continue as an important earner of foreign exchange and to more than cover the exchange requirements for certain qualities of raw cotton. The foreign exchange problem is given considerable emphasis in the outline of the Second Five-Year Plan. On the other hand, India is apparently unwilling to take unduly high risks in letting food production fall below minimum requirements. The country might find it economically advantageous from a short-range profit standpoint to increase cotton production, sell the cotton, and buy food grains; but the risk of not having sufficient food grain at the right time is of grave concern to the government. Therefore, in all likelihood, India will walk the tight rope of maintaining food supplies at a reasonably satisfactory level and will continue to encourage cotton production consistent with this policy.

The long-time outlook for cotton production is somewhat different. If the economic development program should fail to permit India to break through toward a substantial industrial program, a potential cotton production program of around 5 million bales would be all one could reasonably expect. On the other hand, if India succeeds in the economic development program, the flow of capital into cotton production will probably intensify--especially in the irrigated areas. Again, it must be recognized that much of the long-term flow of capital that will be most essential to the expansion of the country's cotton production potential will be government capital--especially capital going into research, extension service, and irrigation development. As a result, the decisions that are most important from the standpoint of the world cotton trade are largely governmental in nature. The motivations for expanding cotton production in India are different from those usually found in a highly developed country such as the United States. Therefore, changes in short-run price relationships among alternative crops can be expected to have far less influence on shifts in cotton production in India than in a country where the profit motive can have free play, unhampered by the need to maintain a delicate balance between food supplies and population.

PAKISTAN

Although Pakistan has been an independent sovereign country only a decade, it is the fifth most populous in the world, with some 85 million people. The country is predominantly agricultural; over 80 percent of the people depend on the land for their livelihood. Of a cultivated area of some 54 million acres, about 43 million are in food grains, principally wheat in West Pakistan and rice in East Pakistan.

The principal exports are jute, first; cotton, second; and tea, third.

Cotton, which is produced almost exclusively in West Pakistan, grows in two areas: the Punjab and the Sind.

Production averaged about one million bales annually just after partitioning in 1947. Since 1950, there has been no discernible production trend; the crop over the period ranged from 1,225,000 bales in 1950 to a high of 1,525,000 bales in 1952. Average annual production for the 7-year period 1950-56 was 1,339,000.

Slightly over 3 million acres are planted to cotton. Acreage in cotton in 1956 was a little over 10 percent higher than in 1950. Yields over the past 7 years have shown a high degree of stability, ranging from a low of 191 to a high of 211 pounds per acre.

The significant expansion of the country's textile industry since 1950 has caused the domestic consumption of raw cotton to rise from 160,000 bales in 1950 to over 800,000 in the last 2 years.

Cotton: Acreage, yield, production, consumption, and exports in Pakistan, average 1945-49, annual 1950-56

Year beginning August 1	Acreage	Yield per acre	Production	Consumption	Exports
	1,000 acres	*Pounds*	*1,000 bales*[1]	*1,000 bales*[1]	*1,000 bales*[1]
Average:					
1945-49[2]..........	2,928	153	931	129	802
Annual:					
1950..............	3,011	195	1,225	160	1,039
1951..............	3,244	198	1,340	175	919
1952..............	3,467	211	1,525	245	1,273
1953..............	2,930	199	1,215	440	893
1954..............	3,185	196	1,300	650	634
1955..............	3,540	193	1,420	810	723
1956..............	3,560	189	[3] 1,400	[3] 825	[3] 506

[1] 1934-45, bales of 478 pounds; 1946 to date, 480 pounds net.

[2] 3-year average, 1945 and 1946 included with India.

[3] Preliminary estimates.

This sharp increase in domestic consumption has resulted in a rise in per capita consumption, a reduction in cotton textile imports, and a 50-percent reduction in raw cotton exports. Exports are down from an average of about a million bales annually during the first few years of the 1950's to 506,000 bales in 1956. The reduction in export availabilities has created a serious problem in the country's international balance-of-payments position.

In Pakistan, cotton competes with sugarcane for agricultural resources in the summer and indirectly with the grain crops which are produced in the winter months. Sugarcane acreage, however, is minor in comparison with the acreage in cotton. Although sugarcane at the present level of production is about as profitable as cotton, it requires considerably more water per acre--and water, of course, is scarce. Therefore, the real competition for land is between cotton and the small grains, principally wheat. On an average, cotton is about 20 to 30 percent more profitable than wheat to the individual farmer and over twice as profitable as wheat from the standpoint of the national economy as a whole, since the country derives considerable revenue from the tax imposed on exports of cotton.

Unpredictable rainfall, primitive cultural practices, high insect and disease infestation, poor seed, and salting and waterlogging of the soil are major obstacles to the expansion of Pakistan's cotton production.

Another unfavorable factor is the land tenure system, which leaves much to be desired from the standpoint of giving the actual cultivator an incentive to improve production techniques. The land is usually farmed by tenants who receive from 25 to 50 percent of the crop for their contribution of labor, both human and bullock. The tenant also absorbs the seed cost, or at least one-half of it. The landlord furnishes the land and water for producing the crop and generally one-half of the cost of commercial fertilizer and insecticides when these items are used. The decision as to what will be produced on the land rests largely with the landlord. Therefore, production decisions by the landlord are based upon the relation of the net returns from cotton and competing crops to the investment in land and water resources.

The export tax of 6.16 cents a pound on upland cotton and 4.29 cents on desi varieties is not high enough to drive resources out of cotton production; therefore, under the present price structure, reducing the tax would do little to increase the resources available for cotton production. In a country like Pakistan, where capital commitments for various long-time production items come from governmental sources, cotton export taxes have a somewhat different effect from that in a country where private sources dominate.

Lower world cotton prices would have little effect in reducing Pakistan's cotton production unless they were reduced 40 percent or more. On the other hand, a significant rise in the prices received by farmers would certainly increase the incentive for them to grow more cotton, and might have a substantial effect on the rate at which they adopt modern production technology.

Several factors are important at present in determining the cotton production potential of the country: (1) The availability of land and water; (2) the research and extension programs; and (3) the availability of commercial fertilizer.

Practically all of the available water is being used and most of the land suited to cotton production is now devoted to this crop. The prospects of increasing water supply for irrigation are not bright. The land is so flat that it is very difficult to construct water storage facilities without flooding vast areas of the productive soils.

When all work is completed on the several irrigation and drainage projects currently under way or contemplated, including irrigation canals, an estimated 3 million additional acres will be added to the irrigated area. The completion of this work is not expected before 1970, and within the next 5 years the additional irrigated land available for cotton production will probably be small. After the next 5 years much more irrigated land may become available for cotton provided the salinity and waterlogging problems are solved. Agricultural leaders fear that the country is losing as much land from salting and waterlogging as is coming into production through improvement in present irrigation facilities and the development of new projects.

With little possibility of increasing land and water supply for cotton production, any increase that occurs in production must come largely through increased yields per acre. Undoubtedly, there is a substantial potential for increasing yields. But if such an increase is to be achieved, it most likely will have to come through research and education. The Second Five-Year Plan calls for about a 40-percent increase in cotton production; but since the major part of this increase (an estimated 70 percent) would have to come from an increase in yields it is very doubtful that the goal will be reached. At the most, one could not expect research and education to increase yields by more than 3 to 5 percent per year, and an increase of this magnitude per year over the next 5 years seems overoptimistic. This is a long-time proposition.

The cotton research staff in Pakistan appears to be capable and well-trained. They are doing a good job with the limited resources at their disposal. In Pakistan, as in other countries with limited research resources, it does not appear that adequate consideration has been given to the determination of the specific research that would probably contribute most to the real income of the country. Major emphasis is devoted to developing new varieties of cotton when research on cultural practices and irrigation techniques may well offer possibilities of greater returns to the country's income per unit of resources spent on research.

In Pakistan, research seems to be much ahead of extension work, although it is somewhat difficult to substantiate this conclusion with statistical data. Cultural practices are primitive. It appears that the number of plants per acre would not on an average exceed more than one-half the number recommended by the Pakistani experiment stations.

Results from commercial fertilizer tests have been encouraging in some areas. Farmers report, however, that yields actually decrease when fertilizer is applied to lands with a high salt content. Fertilization results discussed with farmers indicate the necessity of soil analysis for the economical use of commercial fertilizer. It is estimated that about 60 percent of the land now planted to cotton will respond effectively to the application of commercial fertilizer.

In addition to research and extension programs, the government has assisted greatly in cotton production through the development of irrigation. On the other hand, since no alternative crop has seriously challenged cotton as a cash crop, the government has actually discriminated in certain ways against cotton without really discouraging its production. For example, the fee for irrigation services is proportionately larger for cotton than for food grains.

Like other countries that are attempting broad economic development programs, Pakistan is having difficulty in maintaining a balance between long-term capital investment and short-term investment that will produce consumer goods quickly. Generally, the economic development programs have produced money income faster than the country can produce or otherwise obtain consumer goods. Therefore, certain inflationary pressures are present, especially with imported goods and services.

To carry the development program to a reasonably successful conclusion, Pakistan must import a large amount of capital goods and technical know-how. To obtain these imports, the country must depend on (1) foreign investment capital; (2) foreign loans; (3) gifts and aid from foreign countries; and (4) earning of foreign exchange from the sale of goods and services abroad.

Even though the first three of these sources may play a major role in financing economic development, foreign exchange earnings from the sale of goods and services are essential. The largest earners of foreign exchange are jute and cotton; all the jute comes from East Pakistan, and cotton is the No. 1 export of West Pakistan. The overall development potential appears to be larger in West Pakistan. Yet the allocation of most of the foreign exchange to purchase goods and services for the development programs in West Pakistan creates a serious political problem between East and West Pakistan.

Cotton is the only major item produced in West Pakistan for which a substantial export market exists. Should an efficient textile industry develop, with a capacity for surplus production, the export of cotton textiles would not only earn foreign exchange, but also aid in the industrial program. Under present conditions, it is almost imperative from the standpoint of the economic development plan that Pakistan maintain exports of cotton or cotton goods. In view of this situation, it is expected that any economic development plan will continue to stress the production of cotton in the foreseeable future. This is not to say that such plans will not recognize the need for improvements in the production of other agricultural segments; but the need for foreign exchange will tend to increase the comparative advantage of cotton over other crops, other things being equal.

The textile industry is expected to stabilize at an annual raw-cotton consumption level of around 1.0 million bales, although at this time part of the textile output at this level of operations would be exported. If the textile industry can develop so that it can effectively compete in the textile export market, textile production may well increase to a much greater extent. Pakistan no doubt will continue over the next several years to depend upon cotton or cotton products as an earner of foreign exchange. Unless a substantial rise takes place in real income, the internal consumption of cotton textiles will not increase much beyond the rate of population increase. This rate of increase will very likely require the major part of any increase in cotton production over the next few years. Under the conditions outlined, the long-run prospect is for Pakistan to hold an export balance for cotton or cotton products in the neighborhood of some 500,000 to 750,000 bale equivalents--far short of the 1.0 million to 1.1 million bales set as a goal in the Second Five-Year Plan.

IRAN

Iran, with a population of some 22 million people, is making strong efforts to develop economically. Although the country has considerable agricultural potential, Iranian leaders have emphasized industrial development over that in agriculture.

Cotton is grown in many scattered valleys throughout Iran but production is concentrated in three major areas: (1) Near the Caspian Sea--particularly in the Gorgan and Mazanderan areas; (2) northeastern Iran, or the Khorasan area; and (3) east of Tehran on the Varamin Plains. Of these three areas, the regions near the eastern side of the Caspian Sea account for more than half the country's production.

Production of 85,000 bales annually during the postwar period 1945-49 was far below the prewar 1934-38 average of over 150,000 bales. Beginning in 1952, under the stimulus of record world cotton prices during the Korean War, cotton production began its climb to a new plateau, rising to a record level of 285,000 bales in 1956.

Yields per acre have increased slightly in recent years primarily because of the introduction of improved varieties and not so much as a result of a general improvement in production practices. Practically no commercial fertilizer is used, and insect damage in some years has been serious. However, experiments in the use of fertilizer have shown some promise and more general control of cotton insects is thought to be desirable. Increased fertilization, better insect control, further improvement in planting seed, and the adoption of improved cultural practices are factors that have definite possibility of increasing per acre yields; but the adoption of such recommended practices is retarded by lack of producer know-how and effective extension programs.

Cotton: Acreage, yield, production, consumption, and exports in Iran, averages 1934-38 and 1945-49, annual 1950-56

Year beginning August 1	Acreage	Yield per acre	Production	Consumption	Exports
	1,000 acres	*Pounds*	*1,000 bales*[1]	*1,000 bales*[1]	*1,000 bales*[1]
Average:					
1934-38	402	188	158	78	80
1945-49	239	171	85	94	12
Annual:					
1950	321	193	129	46	105
1951	371	160	124	69	35
1952	450	176	165	70	117
1953	555	208	240	70	164
1954	620	213	275	73	204
1955	650	203	275	82	177
1956	625	219	[2] 285	90	[2] 190

[1] 1934-45, bales of 478 pounds; 1946 to date, 480 pounds net.
[2] Preliminary estimates.

Although domestic consumption of raw cotton has increased substantially in the past 2 or 3 years, it is still no greater than in the 5 years just after the war. The domestic textile industry has had difficulties in increasing its efficiency and the quality of its output in recent years, but government leaders are now encouraging its development with the hope that the country will soon produce the bulk of its domestic requirements.

To the extent that the domestic textile industry increases its facilities as well as its performance, it may consume all the gradual increase in cotton production that is expected to result from the cotton improvement programs over the next few years. If so, Iranian exports will continue in the range of 150,000 to 200,000 bales annually in the foreseeable future.

Cotton is produced in all of the principal irrigated areas but considerable cotton also grows in areas dependent on rainfall. Wheat is the principal competing crop, followed by barley. In the more productive irrigated areas, net profits per acre of cotton at 1956 cost-price relationships ranged from one and one-half to two times those for wheat. In dryland areas, where gross returns from all crops are relatively low, the margin in favor of cotton is usually less. Producers have indicated interest in the development of new crops but as yet have not found a crop that can be grown on a commercial scale with anything like the profitableness of cotton.

There is considerable land area that can be brought under irrigation but progress in expanding irrigation has been slow. Realization of the country's full utilization of available water supplies for irrigation will take coordinated planning and expensive installations. Since little progress has been made in planning future irrigation and development schemes and even less progress has been made in raising capital for agricultural development, it is safe to conclude that it will be a long time before the country approaches its full agricultural potential.

A basic problem in raising the country's agricultural output relates to tenure reform and the development of a tenure system that will encourage individual initiative. Another basic problem is that of raising the level of producer know-how through education.

Funds for economic development are increasing as oil revenues increase, and prospects for a continued rise in oil revenues are favorable. Most of the funds devoted to economic and social development in recent years have been spent in long-range improvement and development of roads, health and sanitation facilities, power, and education. Industrial development has had priority over agriculture in the allocation of available development capital. Expenditures for increasing the short-range production of food and consumer goods industries have in general lagged behind the commitments for long-term economic development.

The government, recognizing the importance of cotton to the economy, has taken positive action to improve the organization of the cotton industry. By decree the Council of Ministers has established a High Council for cotton to regulate such matters as the classification of cotton, methods of harvesting, ginning, and exportation. Recognition of the need for improving the production and handling of the crop indicates progress, but all realize that it will take time to develop know-how in cotton production and even more time to obtain the application of modern technology by the country's cotton producers.

Nevertheless the prospects are for a gradual increase in cotton production in Iran as production techniques improve, provided world prices do not drop more than 20 to 25 percent below levels existing at the beginning of the 1956-57 cotton season. Weather, however, may cause variations in production up to 15 percent in any particular season, for a fairly high percentage of the Iranian crop is still grown under dryland conditions.

Some of the factors favorable to long-run expansion are these:

(1) Average returns to the cotton enterprise at current world prices are much greater than returns from alternative crops; (2) research programs for improvement of varieties and cultural practices are off to a fair start; (3) an extension program has been developed; (4) financial assistance is being given for the production of cotton, the distribution of better planting seed, the control of cotton insects, and the encouragement of better marketing practices; and (5) several small irrigation development projects, contemplated or under way, can be expected to increase the cropland area.

Unfavorable factors largely offsetting the favorable ones at the present time are these:

(1) Primitive cultural methods employed in cotton production and the long time required to develop production know-how; (2) a land tenure system with a high percentage of absentee ownership and the accompanying lack of supervision; and (3) a poorly organized marketing system that fails to provide an incentive to producers for improving quality.

IRAQ

Production of cotton in Iraq is of minor importance at the present time--around 30,000 bales annually.

Production techniques are crude and not likely to improve rapidly. Farmers use practically no commercial fertilizer in cotton production, and cotton land lies fallow every other year. Though cotton appears to be much more profitable than the main competing crops--wheat and barley--research and educational programs are extremely weak and prospects for immediate improvement are poor. However, some progress in mechanization is evident.

The country's Development Board expects to provide additional land through irrigation and drainage projects.

A special report of a New York engineering firm[1] estimated that the arable and irrigable land in the Tigris-Euphrates Valley can be increased by 5.6 million acres, giving a total of nearly 14 million acres in the valley. This 70-percent expansion would increase the agricultural land area from 3.8 acres per person to 10.2 acres per person.

Full development of the agricultural potentials of the Tigris-Euphrates Valley in Iraq would give this country over four times as much land in relation to population as there is in Turkey and Greece and over five times as much as in Egypt.

The development of irrigated lands in Iraq is an integral part of flood control. The Tigris and Euphrates are subject to seasonal flooding. If adequate reservoirs are constructed to control floods as now planned, this flood water can be made available to increase the irrigated area.

The Iraqi Government created the Development Board in 1950, and subsequently granted it 70 percent of the country's oil revenues. Over the last few years oil revenues have been rising, and it is estimated that they exceeded $196 million in 1955.[2] The Development Board has embarked upon a long-range plan to control floods and develop irrigation facilities, but because of the long-run nature of many of the projects, expenditures have not kept pace with revenues. As a result, exchange reserves of the Development Board have been growing.

The Development Board's new Five-Year Program initiated in 1955 proposed a total budget in excess of $840 million. Of this, more than one-third or $311 million was programmed for irrigation and drainage schemes. This amount indicates the size of the program that is planned. Even though great progress is now under way, it does not appear likely that any great expansion in agriculture will occur before 1960. Development of Iraq's agricultural potential is a long-time proposition requiring not one decade but maybe two or three. Even after the irrigation developments reach completion, there is the difficult problem of locating the indigenous population on the land and teaching them the arts of commercial agriculture.

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[1] Knappen-Tippetts-Abbett-McCarthy, Engineers, of New York and Baghdad. Development of the Tigris-Euphrates Valley. Baghdad, 1955. P. 4. Abridged version of October 1952 report, Development of the Tigris-Euphrates River Systems.

[2] Government of Iraq, Development Board. Development of Iraq. Middle East Export Press. P. 10.

Cotton: Acreage, yield, production, consumption, and exports in Iraq, averages 1934-38 and 1945-49, annual 1950-56

Year beginning August 1	Acreage	Yield per acre	Production	Consumption	Exports
	1,000 acres	*Pounds*	*1,000 bales*[1]	*1,000 bales*[1]	*1,000 bales*[1]
Average:					
1934-38...........	37	116	9	---	[2] 8
1945-49...........	22	109	5	3	[3] 4
Annual:					
1950..............	100	182	38	7	31
1951..............	110	161	37	11	19
1952..............	125	50	13	12	8
1953..............	51	160	17	14	3
1954..............	100	149	31	15	11
1955..............	100	158	33	16	19
1956..............	105	155	[4] 36	[4] 20	[4] 16

[1] 1934-45, bales of 478 pounds; 1946 to date, 480 pounds net.

[2] Calendar year.

[3] Crop year beginning Mar. 1.

[4] Preliminary estimates.

It is generally believed that of the additional water that might be provided for irrigation in the Tigris-Euphrates Valley in the summer months, a large proportion will be used to grow cotton. But none of the factors contributing toward the expansion of cotton production is changing fast enough to have any substantial effect on production within the next few years.

Increase in the consumption of raw cotton will probably absorb any increase in production available over the next 3 to 5 years. The fact that per capita consumption since 1950 has failed to reach the 1938 level is shown in the following statistics on per capita availabilities of cotton textiles, issued by the Food and Agriculture Organization of the United Nations:

	Pounds
1938	4.0
1950	3.7
1951	3.5
1952	3.5
1953	3.5
1954	4.0
1955	3.5

The installation of a new modern mill by the Development Board is expected to result in greater domestic production and should help increase the availability of cotton textiles for local use.

In the long run, however, Iraq may well produce cotton as its major agricultural product, especially if relative prices do not change more than 20 percent against cotton. The extreme heat in summer, though amply high for optimum environmental conditions for cotton production, severely limits the commercial production of alternative crops. It also means, however, that large-scale production of cotton will very likely be conditioned upon mechanization in order to reduce labor requirements. In sum, it appears that cotton--a hardy crop and one for which there is nearly always a commercial outlet--will have strong staying power in Iraq's developing agricultural pattern. Conceivably, the cotton production potential of the country may exceed a million bales annually some 20 or 30 years from now.

GREECE

Greece, predominantly an agricultural country, cannot yet meet the minimum requirements of its 8 million people for goods and services. It is trying to increase industrial capacity, but lack of raw materials and shortages of investment capital retard progress in this direction. A country faced with this situation usually makes strenuous efforts to increase exports of staple agricultural commodities that have a comparative advantage in the use of available agricultural resources. Such exports are the means of providing the foreign exchange required to meet international commitments, to help finance and service the industrial sectors of the economy, and to procure the minimum essential imports of food that the country cannot produce domestically.

Since the period just after World War II, 1945-49, the acreage planted to cotton has increased over three and one-half times while production has expanded five times. Yields have risen remarkably, from an average of 225 pounds an acre during the 1945-49 period to an average of over 300 pounds for the past 4 years. Since domestic consumption in 1956 amounted to only about 40,000 bales more than in early postwar years, most of the expansion in production has been reflected in larger exports. Whereas Greece was a net importer of cotton prior to 1950, exports since 1955 have risen well above 100,000 bales annually. Cotton has become the second most important export commodity after tobacco.

Greek cotton production may expand further as existing water supplies are more fully utilized and more intensive cultural practices are employed. This long-term trend will be affected by short-run difficulties, particularly insect damage and unfavorable weather. Greece is similar to many so-called minor cotton-producing countries in that production has expanded since 1950 at a spectacular rate, yet the country is not considered a major world supplier from the standpoint of total cotton production at this time.

Generally, cotton has competed directly with wheat for the use of land in central Greece and to a lesser extent in northern Greece. However, it is really a new crop in areas that have been reclaimed in recent years. In a country such as Greece, where labor is abundant and land is the limiting resource to agricultural expansion, net returns over cash costs per unit of land resources are the most realistic measure for comparing the relative profitableness of alternative crops. Official cost comparisons of the Hellenic Cotton Board show that on the basis of average yields and cash production costs in 1955, cotton was nearly four times as profitable as wheat when measured in terms of net returns per unit of land. More conservative estimates prepared in the field, based on anticipated normal yields and competitive world prices for cotton in 1956-57, indicated that cotton might not be more than two and one-half to three times as profitable as wheat. Since farmers can grow cotton with family labor that has little or no alternative employment, the crop has a strong competitive advantage in those areas where climate and soil are suitable to cotton culture.

Despite the decline in world cotton prices of 20 to 25 percent from 1955 to 1956-57, Greek agricultural leaders still have a strong incentive for pushing the expansion of cotton production. An official goal of a half million bales, believed feasible by some Greek cotton leaders, is not likely to be obtained during the next 5 years. Annual production of some 300,000 to 400,000 bales appears more probable, because of the environmental and physical problems to be faced. However, if available water supplies in central Greece and Thessaly can be more fully utilized, and if cultural practices continue to be intensified, as they probably will under the increased tempo of the cotton production educational program, the official goal of a half million bales annually within the next decade does not appear unrealistic.

Cotton: Acreage, yield, production, exports, imports, and consumption in Greece, averages 1934-38 and 1945-49, annual 1950-56

Year beginning August 1	Acreage	Yield per acre	Production	Exports	Consumption	Imports
	1,000 acres	*Pounds*	*1,000 bales*[1]	*1,000 bales*[1]	*1,000 bales*[1]	*1,000 bales*[1]
Average:						
1934-38.........	149	221	69	---	96	22
1945-49.........	111	225	52	---	81	35
Annual:						
1950............	191	294	117	7	113	22
1951............	213	293	130	21	110	1
1952............	203	262	111	26	105	1
1953............	220	303	139	29	117	1
1954............	270	338	190	68	115	9
1955............	410	327	279	180	105	2
1956............	395	284	[2] 234	[2] 148	[2] 120	[2] 19

[1] 1934-45, bales of 478 pounds; 1946 to date, 480 pounds.
[2] Preliminary estimates.

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